



# Overview of Food Management in the Nutrition Installation of Madina General Hospital Bukittinggi in 2024

**Patrianisa Utami, Legabina Adzkia, Elsi Susanti**

Universitas Muhammadiyah Sumatera Barat

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## **ABSTRACT:**

**Background:** Hospital nutrition installations play an important role in ensuring the safety and quality of patient food through the application of sanitation and hygiene principles. Non-standardized food management can pose serious health risks, especially in a hospital setting.

**Aims:** This study aims to describe food management in the Nutrition Installation of Madina General Hospital Bukittinggi, including aspects of material selection, storage, processing, transportation, and food presentation.

**Methods:** This study used a descriptive method with a qualitative approach. Data were collected through direct observation and semi-structured interviews with three main informants and triangulation with the head of the nutrition sub-unit. Data analysis techniques followed the stages of data reduction, data presentation, and conclusion drawing according to Miles and Huberman.

**Result:** The results show that the selection of food ingredients is done carefully and according to standards. Storage meets FIFO and FEFO principles with separation of dry and wet warehouses. Food processing follows a 10-day menu cycle and is tailored to the patient's diet, although the main kitchen space is still not physically ideal. Food transportation is done on time using closed containers, and serving is done according to dietary standards and patient portions.

**Conclusion:** In general, the Madina General Hospital Nutrition Installation has carried out food management according to food sanitation principles, although improvement is still needed in the aspects of kitchen facilities and supervision of the use of PPE by officers.

**Keywords:** Food sanitation, nutrition installation, food management, hospital, nutrition service

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## INTRODUCTION

Nutrition installations in hospitals are an important part of health services that are responsible for procuring, storing, processing, and serving food for patients (Billah et al., 2022; Darise et al., 2024; C. Pratiwi et al., 2022; Shakhshir & Alkaiyat, 2023; Syamsuddin et al., 2020) . According to WHO, sanitation is an effort that oversees environmental factors that affect human health, including aspects of food hygiene This is because foodborne infections can increase morbidity among hospitalised patients. According to national data from the Ministry of Health (2019), over 60% of hospital-acquired infections are associated with poor hygiene practices, including unsafe food handling. This highlights the urgent need for high-quality food sanitation standards in hospital nutrition services to aid patient recovery. (Boraa et al., 2023; Kandusu et al., 2019; Pamukti & Juwitaningtyas, 2021) . Poorly managed nutrition installations can be a source of contamination and harm to patients, especially if there are violations in the principles of food hygiene and sanitation. Therefore, the urgency of this study lies in the importance of maintaining food safety in hospitals to support the healing process of patients.

However, this ideal condition has not been fully achieved at Madina General Hospital Bukittinggi. Based on the results of initial observations made by researchers in August 2024, it was found that food handlers did not comply with the use of Personal Protective Equipment (PPE) such as gloves and masks when processing food. This non-compliance is contrary to the provisions of Permenkes No. 1096 of 2011 which regulates the sanitary hygiene of food services in health care facilities (Nurani et al., 2019; Rianta, 2022; Setyawati et al., 2022) . This condition indicates a gap between the ideal practice of food management according to standards and the reality in the field.

This study has the potential to make a significant contribution by describing food management practices in a real hospital setting, from ingredient selection to serving. It could serve as a model for identifying weaknesses and recommending improvements to hospital nutrition systems, not only in Bukittinggi, but also in similar institutions across Indonesia.

While many studies have examined aspects of food service quality in hospitals, few have investigated sanitation comprehensively throughout the entire management chain, particularly in a local context such as Madina Hospital. This represents a research gap that this study seeks to address. This study's novelty lies in its holistic approach of assessing food management through direct observation and interviews, and evaluating its alignment with sanitation principles in a real operational environment.

The reason for selecting variable X, "food management", is based on the importance of this aspect in ensuring the quality of health services and patient safety. Food management is a direct indicator of the performance of the nutrition installation, and its implementation is highly dependent on operational standards and staff discipline (Ardana & Nirwana, 2024; Familta et al., n.d.; Resta et al., 2024) . Therefore, observation of this variable is important to determine the extent to which the implementation of sanitation principles has been applied as required.

The main objective of this study was to thoroughly describe food management practices in the Nutrition Installation of Madina Hospital Bukittinggi. Specifically, this study aims to provide empirical information that can be used as a reference by the hospital in improving systems and workforce training. The contribution of this research is not only academic, but also applicable in the form of technical recommendations that can be applied directly in the field to improve the quality and safety of hospital food services.



## METHOD

### Research Design

This study used a descriptive qualitative research design (Hunter et al., 2019; Turale, 2020). The qualitative approach was chosen because it allows the researcher to explore, observe, and describe the condition of food management at the Nutrition Installation of Madina General Hospital Bukittinggi in depth. Data were obtained directly through interviews and field observations to capture real practices related to food hygiene and sanitation.

### Participants

The participants in this study were three key informants directly involved in food handling and preparation at the hospital's Nutrition Installation. These included a Head of Nutrition, a Nutrition Officer, and a Kitchen Assistant. Additionally, triangulation was performed with the Head of the Nutrition Subunit to validate the findings.

### Population and the Methods of Sampling; Instrumentation

The population of this study consisted of personnel working in the Nutrition Installation of Madina General Hospital Bukittinggi. The sampling technique used was purposive sampling, where informants were selected based on their roles and relevance to the food management process. Instrumentation was carried out using a semi-structured interview guide and observational checklist.

a. Sample questions included:

- "How is food material selected and stored in this hospital?"
- "How is food processed and distributed to patients?"

b. Scoring was qualitative (descriptive coding) and not based on numerical values.

c. Validity was ensured through triangulation of sources (interviews, documents, and observations), while reliability was supported by repeated observations and consistent answers across informants.

### Instrument:

The study employed a semi-structured interview guide and an observational checklist for instrumentation. These were developed in reference to Indonesian Minister of Health Regulation No. 1096/Menkes/Per/VI/2011, which outlines key indicators of safe food handling practices in healthcare facilities. The observation checklist focused on aspects such as the use of personal protective equipment (PPE), kitchen sanitation, food storage protocols and compliance with the first-in, first-out (FIFO) and first-expired, first-out (FEFO) principles. The interview questions explored the practical implementation of these policies and staff perceptions of the challenges and improvements in food management.

Sample interview questions included:

'How is food material selected and stored in this hospital?'

How is food processed and distributed to patients?'

### Procedures and Time Frame

The study was conducted at the Nutrition Installation of Madina General Hospital, Bukittinggi, during August 19-20, 2024. The steps included:

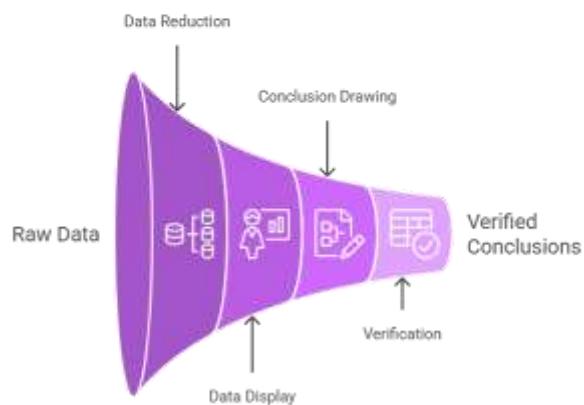
- Initial observation of food handling processes.
- Conducting semi-structured interviews with selected informants.
- Triangulation with the head of the Nutrition Subunit.
- Document review to cross-check data accuracy.

## Analysis Plan

Data analysis followed the model by Miles and Huberman, involving:

- Data Reduction: Summarizing and selecting relevant data from observations and interviews.
- Data Display: Presenting data in narrative form, supported by quotes and tables when necessary.
- Conclusion Drawing and Verification: Identifying patterns and drawing conclusions from recurring themes and confirming findings through triangulation and verification of information consistency.

Data Analysis Process Funnel



## RESULTS AND DISCUSSION

### Result

This study describes food management in the Nutrition Installation of Madina General Hospital Bukittinggi by examining five main aspects, namely food selection, storage, processing, transportation and serving. Through direct observation and interviews with key informants, it was found that the entire food management process refers to the applicable food sanitation and hygiene standards, although there are still some important notes in its implementation.

The selection of food ingredients is done carefully by paying attention to quality and legality such as BPOM certification. Nutrition officers use technical specifications set by the hospital to assess ingredients based on size, color, and freshness. Fresh ingredients such as meat, fish and vegetables are purchased every other day, while dry ingredients such as milk and seasonings are purchased on a monthly basis. Inspection of the ingredients is done by the processing or receiving staff, and if the ingredients do not meet the specifications, they can be returned to the supplier.

Food storage is divided into two types of warehouses: dry warehouses for ingredients such as flour and seasonings, and wet warehouses for storing ingredients such as meat and vegetables. The warehouses are neat and clean and apply the FIFO (First In First Out) and FEFO (First Expired First Out) principles to maintain quality and prevent damage to food ingredients. The system of recording the entry and exit of food ingredients is also carried out in an orderly manner, and the

condition of the warehouse is kept free from insects and meets the standards of storage temperature and humidity.

Food processing is carried out in the main kitchen and clean kitchen, which are separated from the serving area. Processing refers to the 10-day menu cycle and is tailored to the patient's diet, both inpatient and outpatient. Food is processed by trained personnel, and only those without open wounds are allowed to process food. However, it was found that the main kitchen has a low and stuffy space, which could potentially lower the standard of hygiene and working comfort. The processed food is packed into flasks or bushels, then transported using covered baskets by operational staff according to a set schedule: morning snack at 09:00, lunch at 12:00, afternoon snack at 15:00, and dinner at 17:00. Timeliness of distribution is a major concern. If food is damaged or spilled in the transportation process, it will be immediately replaced with a new one from the main kitchen to maintain quality and patient safety.

The final stage of management is the serving of food, which is done with care according to the patient's diet. Each serving contains carbohydrates, protein, vegetables, and fruit tailored to the patient's medical condition. Foods that spoil quickly are prepared in quantities according to the patient's daily needs to avoid leftovers. All food is served in clean and closed containers, and is not touched directly by hands to prevent cross-contamination. Thus, it can be concluded that the Madina Hospital Nutrition Installation has carried out fairly good food management, although improvements are still needed in the aspects of processing room facilities and supervision of standard operating procedures.

## Discussion

The results showed that food management in the Madina Hospital Nutrition Installation has reflected most of the principles of good food sanitation, from the selection of ingredients to serving. This finding is in line with the theory of the *Ministry of Health (2019)* which states that nutrition installations must carry out all stages of food service procurement, storage, processing, and serving hygienically and according to standards (Firdauzia, 2019; Mutia et al., 2021; Srianara & Agustana, 2023). Implementation of the FIFO and FEFO principles found in research on the importance of an ingredient rotation system to prevent spoilage and maintain the nutritional value of food (Alfadani et al., 2025; Pribadi et al., 2022; Sari & Priyanto, 2024). Thus, this study confirms the importance of monitoring standard operating procedures (SPOs) in supporting patient safety and the efficiency of hospital food logistics.

This study contributes to the strengthening of the literature in the field of hospital nutrition service management, especially in the context of type C hospitals in the region. Different from previous studies that mostly highlighted dietetic aspects or patient satisfaction (Ferryana et al., 2022; Marfuah et al., 2024; Siringoringo et al., 2023). this study comprehensively examines field practices in five aspects of food management. The novelty of this study lies in the in-depth analysis based on field data that showed inconsistencies between the excellent selection and storage and the less than ideal sanitary conditions of the main kitchen. As such, this study broadens the horizons of food management practices based on a quality of service and food safety approach.

This study has several limitations. First, the number of informants was only three and came from one hospital, so the results cannot be generalized to other hospitals with different characteristics. Secondly, despite triangulation, the data obtained still relies heavily on the perception of the informants, which has the potential to cause bias. Third, the observation aspect was not accompanied by microbiological testing or auditing of standard operating procedure (SPO) documents, so that objective validation of sanitation quality was not fully achieved. This limitation is in line with the opinion of *Miles and Huberman (1994)* that the qualitative approach is vulnerable to the limited amount of data and subjectivity bias.

Based on the results of the study and the limitations identified, the researchers suggest that hospital management improve the physical condition of the main kitchen to meet the standards of a

healthy and clean workspace. In addition, it is necessary to conduct continuous training for food handlers regarding the application of hygiene and the use of PPE, as mandated in *Permenkes No. 1096 Year 2011* (Chaerul et al., 2021; Idellia et al., 2025; Palupi, 2023; D. D. Pratiwi et al., 2021). This study has identified critical areas in hospital food management that require immediate intervention, such as kitchen infrastructure and personal protective equipment (PPE) compliance. These findings can inform the implementation of training programmes and infrastructure improvements by hospital administrators that align with national sanitation regulations. From an academic perspective, this study provides a detailed case study of the implementation (or neglect) of food sanitation principles in real hospital settings. It can be used as a reference for future research focusing on hospital logistics, health service quality and public health risk management, particularly in developing regions.

## CONCLUSION

Based on the results of the study, it can be concluded that food management in the Nutrition Installation of Madina General Hospital Bukittinggi has been running in accordance with the principles of food sanitation and hygiene in several aspects. The selection of food ingredients is carried out carefully in accordance with the quality standards and specifications set by the hospital. Food storage also meets the FIFO and FEFO principles, and is separated between dry and wet warehouses. Food processing follows the menu cycle and considers the patient's diet, although the cramped and stuffy condition of the main kitchen space shows the need for improvement in terms of infrastructure. Food transportation is done on schedule using closed containers, and serving is done with attention to dietary needs and portions according to hospital service standards.

This finding reinforces the *MOH (2019)* theory that food management in hospitals is an integrated process that requires strict control at every stage to ensure food safety and quality. In addition, this study shows the importance of training and supervision of food handlers, as stipulated in *Permenkes No. 1096 of 2011*. Therefore, the success of a food management system is not only determined by procedures, but also by behavioral factors and the commitment of the workforce as well as the support of adequate facilities and infrastructure. This study is expected to be the basis for evaluating and improving the management of hospital nutrition services to be more optimal and oriented towards patient safety.

## AUTHOR CONTRIBUTION STATEMENT

The authors' contributions to this research were divided proportionally based on their respective roles. PU was responsible for drafting the research design, conducting observations and interviews in the field, and drafting the initial draft of the research report. LA provided methodological guidance, including validation of observation and interview instruments and guidance in data analysis. Meanwhile, ES contributed in reviewing the literature, sharpening the theoretical framework, and refining the final manuscript in accordance with scientific principles and research ethics. The collaboration of these three authors resulted in a comprehensive and applicable research in the context of food management in hospitals.

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